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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,183	04/11/2001	Joseph A. Hinkle	705570US1	1828

24938 7590 11/14/2006

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EXAMINER
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MEI, XU

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/833,183

**Applicant(s)**

HINKLE ET AL.

**Examiner**

Xu Mei

**Art Unit**

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is responsive to the applicant's amendment dated 08/31/2006.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer (US Patent 5,255,324) in view of Wassink (US Patent 5,633,940).

Regarding Claims 1 and 8, Brewer discloses an audio distortion processing system comprising: a first processing unit (Fig. 1, 15) adapted to be in communication with an audio source (13) wherein said first processing unit controls a plurality of parameters (Brewer discloses volume and bass parameters; Column 4, lines 12-16); a power amplifier (16 and 17) in electrical communication with said first processing unit for receiving an output signal of said first processing unit, said power amplifier selectively generating a clipping signal (signal to 18), said power amplifier adapted to be in communication with at least one speaker (20 through 23); a second processing unit in electrical communication with said power amplifier (10) and said first processing unit (15) for receiving said clipping signal from said power amplifier (signal from 18 to 10)

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and sending a control signal to said first processing unit (14); a plurality of inputs in communication with said second processing unit (panel 11), said plurality of inputs respectively indicating values of said plurality of parameters (Col. 4, lines 7-9); and an incremental reduction in a level of a first parameter of said plurality of parameters (Fig. 2, steps 25, 26, 27, 28, and 29) until one of either said clipping signal recedes or a reduction limit of said first parameter is achieved (step 26 bass is not over reference) and then incremental reduction in a level of a second parameter of said plurality of parameters (steps 25, 26, 30, 31, and 32) if a reduction limit of said first parameter is achieved and said clipping signal persists (limit signal 25) (as per claim 1). And Brewer discloses a method for controlling distortion in an audio system (Figure 1) having first (bass) and second (volume) parameters (Brewer discloses volume and bass parameters) (Column 4, lines 9-12) wherein each of said parameters is a function of an operator input (Brewer discloses switches controlling volume and bass through microcontroller 10) (Column 4, liners 7-12), said method comprising the steps of: determining a reduction limit of said first parameter (Brewer discloses a predetermined reference level, i.e. reduction limit, in step 26) (Column 4, lines 52-53), determining a reduction limit of said second parameter (Brewer discloses reduction of wideband gain, i.e. volume, is stopped when clipping distortion falls below the predetermined threshold (i.e. reduction limit of second parameter) (Column 5, lines 22-32); detecting a clipping signal in said audio system (Brewer discloses clip signal from amp 16 to interface 18); incrementally reducing a level of said first parameter until one of either said clipping signal recedes or said reduction limit of said first parameter is achieved (Brewer

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discloses Figure 2, steps 25-29, which discloses reducing level of the bass signal until no clipping (step 25) is present or reference is reached in step 26); incrementally reducing a level of said second parameter if said reduction limit of said first parameter is achieved and said clipping signal persists (Brewer discloses Figure 2 steps 30-32 where volume is reduced when bass is over reference value in step 26) (as per claim 8).

Brewer discloses fully incrementally recovering the bass and then volume parameters in steps 33 through 41, but does not disclose recovering first parameter (bass) if said original level of second parameter (volume) is fully recovered and said clipping signal is not detected in the audio distortion processing system or method as discussed above.

Wassink also discloses detection of a clipping signal by a controller (5) and control panel 6 which also provides user control of bass and volume (Col. 3, lines 35-40) and that first the bass setting can be reduced then the volume setting (Col. 5, lines 50-53). Wassink further discloses once clipping is not detected volume and bass settings can be increased in a reverse order to the order in which the setting have been reduced (Paragraph bridging columns 5 and 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the audio distortion processing system or method of Brewer by providing parameters (i.e., bass and volume setting parameters) recovery in reverse order as disclosed by Wassink in order to provide a maximum audio output and avoid output signals distortion.

Regarding Claim 2, Brewer further discloses that the reference level (i.e. reduction limit) is a function of a first input (i.e. function of an operator input) (Column 4, lines 52-53).

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Regarding Claim 3, Brewer discloses a system as stated apropos of claim 1 above but does not disclose the reduction limit of said first parameter is equal to one half of said original level of said first parameter. Wassink also discloses detection of a clipping signal by a controller (5) and control panel 6 which also provides user control of bass and volume (Col. 3, lines 35-40) and that first the bass setting can be reduced then the volume setting (Col. 5, lines 50-53). Wassink further discloses the selection criterion for the on whether the next adjustment is to be a volume setting or a bass setting depends on levels set by the user (Col. 5, lines 44-50). Therefore, it would have been obvious at the time the invention was made for the reduction limit to equal half of an operator selectable first parameter level as a matter of design choice.

Regarding Claim 4, Brewer further discloses said reduction limit of said second parameter is a function of said reduction limit of said first parameter (Figure 2, step 26 discloses second parameter is not reduced until first parameter, steps 27 and 28, are reduced to predetermined limit, i.e. second parameter is a function of predetermined limit of first parameter).

Regarding claim 5, Brewer further discloses a reduction limit of said second parameter (Volume) is equal to the difference between a maximum reduction limit of said second parameter (It is inherent that the maximum reduction limit of second parameter (Volume) is zero since a negative volume level is not possible) and said reduction limit of said first parameter (Brewer discloses in Figure 2, step 26 that the volume will not be reduced until the bass in steps 26-29 reach a predetermined limit (i.e.

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reduction limit of first parameter). It is at this point where the second parameter will start to be reduced, therefore the limit.)

Regarding Claim 6, Brewer further discloses first parameter is a bass (Fig. 2, step 28) and a corresponding first input of the plurality of inputs is a operator selectable bass boost (Col. 4, lines 7-12)

Regarding Claim 7, Brewer further discloses the second parameter is volume (Fig. 2, step 31) and a corresponding second input of the plurality of inputs is operator selectable volume level (Col. 4, lines 7-12).

Regarding Claim 9, Brewer further discloses said first parameter is a bass parameter and said second parameter is a volume parameter (Figure 2, Steps 28 and 31).

Regarding Claim 10, Brewer further discloses that the reference level (i.e. reduction limit) is predetermined (i.e. function of an operator input) (Column 4, lines 52-53).

Regarding Claim 11, Wassink further discloses the selection criterion for the on whether the next adjustment is to be a volume setting or a bass setting depends on levels set by the user (Col. 5, lines 44-50). Therefore, it would have been obvious at the time the invention was made for the reduction limit to equal half of an operator selectable first parameter level as a matter of design choice.

Regarding Claim 12, Brewer further discloses said reduction limit of said second parameter is a function of said reduction limit of said first parameter (Figure 2, step 26 discloses second parameter is not reduced until first parameter, steps 27 and 28, are

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reduced to predetermined limit, i.e. second parameter is a function of predetermined limit of first parameter).

Regarding claim 13, Brewer further discloses said reduction limit of said second parameter (Volume) is equal to the difference between a maximum reduction limit of said second parameter (It is inherent that the maximum reduction limit of second parameter (Volume) is zero since a negative volume level is not possible) and said reduction limit of said first parameter (Brewer discloses in Figure 2, step 26 that the volume will not be reduced until the bass in steps 26-29 reach a predetermined limit (i.e. reduction limit of first parameter). It is at this point where the second parameter will start to be reduced, therefore the limit.)

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.




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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Xu Mei  
Primary Examiner  
Art Unit 2615  
11/01/2006